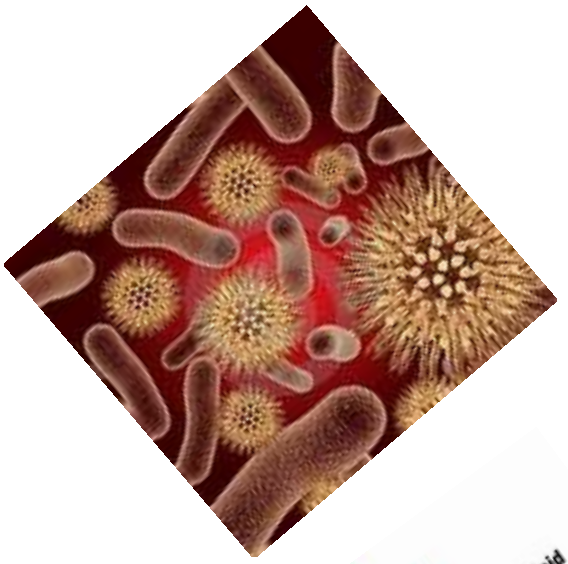
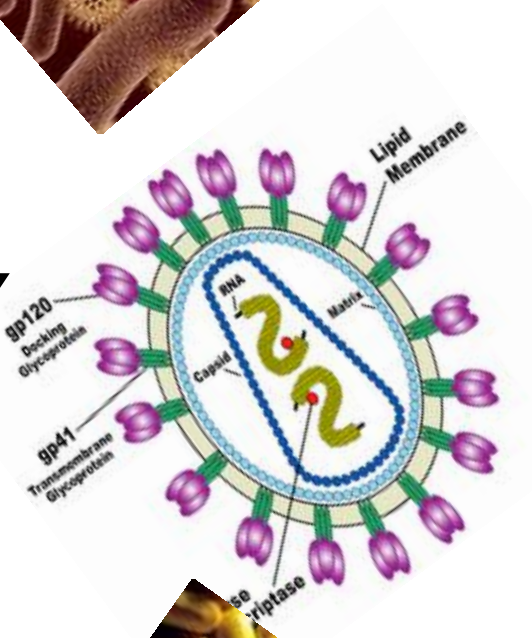
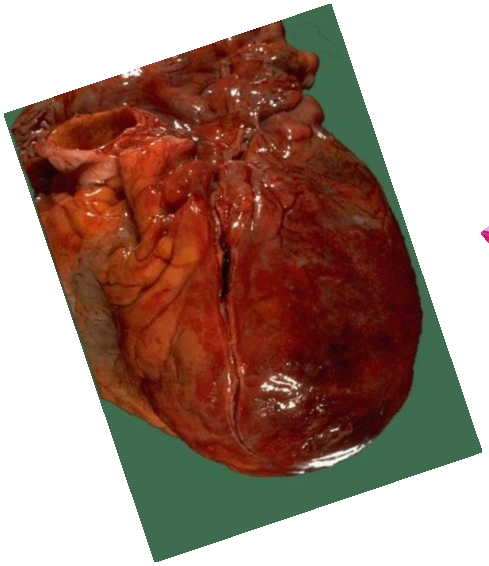


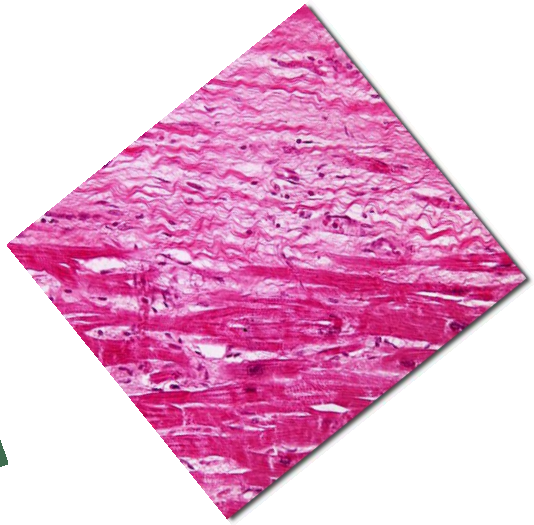


INTRODUCTORY MODULE

PHASE 11

FACULTY OF MEDICAL SCIENCES
UNIVERSITY OF SRI JAYEWARDENEPURA





CONTENTS

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Phase ll Introductory Module

Introduction

Introductory module is the first module of the Phase II of your medical curriculum. It is a ten week module which will be taught in the sixth term.

The main departments involved in teaching are Pharmacology, Pathology, Microbiology and Parasitology. The departments of Paediatrics and Biochemistry would contribute in relevant areas.

This module will comprise General Pathology, General Pharmacology, Introduction to Parasitology, Microbiology, Genetic diseases and Genetic counselling. A list of recommended reading material is annexed at the end of your module hand book and we suggest that you use other supplementary reading material such as journal articles where necessary to further your knowledge.

Methods of teaching include lectures, tutorials, problem based learning, practicals, fixed learning modules (FiLM) and bulletin boards. Time would be allocated for self learning and computer based learning in the computer laboratory.

At the end of the sixth term there will be a formative assessment of the module. The assessment will be in the form of a MCQ paper comprising 25 MCQs. A summative assessment will be held at the end of the third year to evaluate the contents of all the modules you have completed in your third year.

The general objectives of this module are listed below. At the end of the module, you should check if these objectives have been achieved.

❖ The main objectives of this module are to:

- introduce core knowledge in Pharmacology, Pathology, Microbiology and Parasitology.

- introduce basic aspects of genetic disorders and counselling.

Members of the Module Committee

Module development committee

	Name	Department
Chairperson	Prof. Gita Fernando	Dept of Pharmacology
Convener	Dr Kamani Samarasinghe	Dept of Pathology
Member	Prof.S. S.N. Fernando/ Miss.T.D.C.P.Gunasekara	Dept of Microbiology
Member	Prof. Sriyani Ekanayake Dr D.M.D.E.A Gunawardene	Dept of Parasitology

Module implementation committee

	Name	Department
Chairperson	Prof. Gita Fernando	Dept of Pharmacology
Convener	Dr Kamani Samarasinghe	Dept of Pathology
Member	Prof. S. S.N. Fernando Mrs .Manjula Weerasekara	Dept of Microbiology
Member	Prof. Sriyani Ekanayake Dr D.M.D.E.A Gunawardene	Dept of Parasitology
Member	Dr. P.A.P.G. Jayawardena	Dept of Pharmacology
Member	Dr. J.E.S Jayamaha	Dept of Pathology

General Objectives

At the end of the module the student should,

a) understand the principles underlying rational prescribing of drugs
b) be able to discuss the general principles of clinical importance in relation to
   - pharmacokinetics
   - pharmacodynamics
   - adverse drug reactions and interactions.
c) have a basic knowledge of drug development, methods of drug evaluation, especially controlled clinical trials.
d) be able to discuss the concept of essential medicines and the components of an essential medicines policy.
e) have knowledge of basic principles of Molecular Biology and Microbiology as applicable to clinical Microbiology.
f) understand the mechanism and basic tissue changes that occur due to disease in the human body.
g) have basic knowledge of the life cycles and transmission of parasites, pathogenesis, clinical manifestations, diagnosis, prevention and control of diseases caused and the vectors causing disease.

Main content areas

- General Pathology
- General Pharmacology
- Introduction to Microbiology
- Introduction to Parasitology
- Introduction to DNA Technology in Medicine
- Introduction to Genetic counselling

Sub contents

- **General Pathology**
  Cell injury
  Cellular adaptation
  Pathological calcification
  Pigmentation
  Acute inflammation.
  Chronic inflammation
  Wound healing
  Thrombosis and embolism
  Ischaemia and infarction
  Hyperaemia and venous congestion
  Shock and oedema
  Neoplasia
  Basic procedures done in a histopathology laboratory
  Specimen collection, transport and storage
  (Histopathology and Cytopathology)

- **General Pharmacology**
  Introduction to pharmacology
  Pharmacokinetics
  Pharmacodynamics
  Concept of essential medicines
  Drug development
  Methods of drug evaluation-clinical trials
  Drug policy and registration
  Drug information
  Prescription writing
  Patient compliance
  Adverse drug reactions
  Drug interactions
  Aspects of drug management in the state sector
  Principles of antibiotic treatment
  Cytotoxic drugs

- **Introduction to Microbiology**
  General bacteriology and medically important bacteria
  General virology
  General mycology
  Microbial genetics
  Asepsis antisepsis ,sterilization and disinfection
  Antimicrobial chemotherapy
  Host parasitic relationship, microbial virulence and pathogenesis
  Laboratory diagnosis of infective diseases

- **Introduction to Parasitology**
  Definitions of the following – Parasite, Host, Vector, Parasitism, Commensalism, Symbiosis, Zoonosis
  Broad classification of parasites
  Types of parasites and hosts
  Modes of transmission and sources of infection of parasitic diseases
  Introduction to general life cycles with emphasis on pathogenesis and clinical features
  Introduction to medically important vectors.

- **Genetic counselling**

- **Introduction to DNA Technology in Medicine**

GENERAL PATHOLOGY

Intermediate objectives	Broad content area	Teaching Learning Activity	Duration	Department
1) Introduction to Pathology	(A) Basic procedures done in a histopathology lab. Specimen collection and transport. Fine needle aspiration. Fixatives Different staining procedures	Lecture (1) Tute(1)	45mts x 1 45mts x 3	Pathology
2) Cell injury 2.1Describe the causes ,mechanism morphological features and effects of cell injury	(A) Causes of cell injury • Hereditary • Acquired – physical, chemical, microbial, immunological, nutritional (B) Pathogenesis of different types of cell injury (A) Types of cell injury-reversible /irreversible Examples of each type Effects of cell injury (B) Intracellular accumulation (fatty change, accumulation of lipofusin)	Lecture(3) Tutorial(1) Practical(1)	45mts x 3 45mts x 3 45mts x 3	
2.2Define necrosis, list the types & identify clinical features	(A) Definition (A) Types of necrosis- coagulative, liquifactive, caseous, granulomatous, fibrinoid, fat (A) Gangrene- Dry, wet, gas Primary, secondary			
2.3Define apoptosis. Describe basic cellular changes of apoptosis 2.4List the differences between necrosis and apoptosis	(A) Definition of apoptosis. Cellular changes of apoptosis			

3) Acute inflammation 3.1 Define acute inflammation, List the cardinal features and describe the pathological basis of them.	(A)Definition:of acute inflammation (B)Causes (A)Cardinal features. (A)Vascular events and cellular events- (A)Outcomes of acute inflammation	Lectures(2) Practical(1) Tute(1)	45mts x 2 45mts x 3 45mts x 3	Pathology
3.2 Differentiate exudates from transudates. 3.3 List the outcomes of acute inflammation 3.4 Describe the role of mediators in acute inflammation . 3.5 List the beneficial and harmful effects of acute inflammation 3.6 List the main chemical mediators and their effects .	(A)Features of exudates and transudates (A) Chemical mediators (B)Coordination of vascular and cellular events by preformed and synthesized mediators (cytokines, lymphokines)			

4) Chronic inflammation 4.1 Define & describe features of chronic inflammation 4.2 Differentiate chronic inflammation from acute inflammation 4.3 Discuss role of macrophages in chronic inflammation 4.4 Define granuloma and list important granulomatous diseases 4.5 Describe the consequences of chronic inflammation	(A)Definition (A)Features-concurrent tissue destruction, inflammation and repair (A)Role of the Macrophage in chronic inflammation. (A) Examples of chronic inflammation . T.B, Leprosy	Lectures (4) Tute (1) Practical (1)	45mts x 4 45mts x 3 45mts x 3	Pathology
5) Wound healing 5.1 Describe the events in healing of a clean incised wound and a large infected wound 5.2 Describe the complications of wound healing 5.3 List the local and systemic factors that modify wound healing 5.4 Describe the pathological changes and complications of fracture healing	(A)Healing by primary intention and secondary intention, (A)Formation of granulation tissue. (A)Factors that influence wound healing (A)Tissue changes that occur during fracture healing (A)Complications of wound healing and fracture healing	Lecture (1) Tute (1)	45 mts 45mts x 3	Pathology

6.Define and describe the changes of pathological calcification . 6.1 List different types of pigments giving examples.	(A)Definition of pathological calcification (A)Dystrophic and metastatic calcification sites affected and examples for each type .(B)Pathogenesis and effects of pathological calcification (B) Pigments & sites affected	Lecture(1) Reading assignment (1) Tute (1)	45x1 mts 45x3	Pathology
7.Define and describe the predisposing factors, pathological changes and outcomes of thrombosis .	(A)Definition of a thrombus (A)Predisposing factors (A)Clinical situations which increase thrombus formation. (B)Morphology of thrombi pale/red/mixed (A)Outcomes of thrombosis (A)Deep vein thrombosis	Lecture (1) Tute (1) Practical (1)	45mts x 1 45mts x 3 45mts x 3	Pathology
8.Define embolism Describe the pathogenesis and pathological changes of different types of embolism	(A)Definition of embolism (A)Different types- thrombo embolism fat embolism air embolism amniotic fluid embolism tumour and atheromatous plaque embolism (B)Caisson disease (A)Pulmonary embolism and effects	Leture (2) Tute (1) FiLM (1)	45mts x 2 45mts x 3	Pathology
9. Define and list the causes and describe the pathological changes	(A)Definition of ischaemia and infarction. Causes of infarction,	Lecture (2) Practical (1)	45mts x 2 45mts x 3	Pathology

of ischaemia and infarction.	(A)Types and examples for sites affected (A)Outcomes of infarction (A)Macroscopic appearances of each type	Tute (1)	45mts x 3	
10 Describe the causes and effects of venous congestion.	(A)Causes of venous congestion (A)Pathological changes of pulmonary and systemic venous congesion (A)Brown induration of the lung and nut meg liver	Lecture(1) Tute (1)	45mts x 3 45mts x 3 45mts x 3	Pathology
11Describe the causes and pathogenesis of oedema	(A)Causes of oedema local-inflammatory, lymph oedema generalized - pathogenesis of cardiac and renal oedema.pathogenesis of ascites in cirrhosis	Lecture (1) Tute (1)	45mts x 3 45mts x 3	Pathology
12 Define, list the types, pathogenesis and pathological features of shock.	(A)Definition of shock Types –hypovolaemic, cardiogenic and septic shock (A)Pathogenesis of each types (A)Morphological changes in heart, kidney, brain and adrenals	Reading assignment (1) Tute (1)	45mts x 3	Pathology

13(a) Epidemiology of cancer 13(b)TumourPathology (Neoplasia) 13.1 Define neoplasia 13.2 Describe the morphological features of benign and malignant neoplasms 13.3 List the different types of carcinogens 13.4List the different types of cancer causing genes 13.5 Describe the multi- step theory of carcinogenesis 13.6 Describe the effects of tumour on the host. 13.7 Describe the laboratory diagnosis of cancer.	(A) Prevalence & risk factors of malignancies (A)Definition of neoplasia (A)Macroscopic and microscopic features of benign and malignant neoplasms (A)Definition of a carcinogenesis (A)Types of carcinogens (A)Types of cancer causing genes (A)Multistep theory of carcinogenesis (eg; colonic carcinoma arising from an adenomatous polyp) (A)Local and distant effects of tumours including metastasis ,tumour cachexia, and paraneoplastic syndrome (A)Definition of metastasis and paraneoplastic syndrome (A)Methods of tumour diagnosis (A)Various biopsy methods, cytology tumour markers	Lectures 6 FiLM Tute (2)	45mts x 6 45mts x 3 45mts x 6	Pathology

GENERAL PHARMACOLOGY

Intermediate Objectives	Main Content Areas	Teaching Learning Activity	Duration	Department
1. Introduction to Pharmacology	(A) Outline of curriculum (A) Assessment methods - Formative - Summative (A) Recommended textbooks (A) Definitions - Drug - Pharmacology - Clinical pharmacology - Therapeutics (A) Composition (A) Types of drugs - Medicinal - Addictive (A)Names of drugs (Nomenclature) - Chemical - Generic - Brand - Advantages of generic prescribing (A) Factors to be considered for rational prescribing - Efficacy - Safety - Quality - Cost (A) Concept of benefit vs risk (A) Study of individual drugs include - name - group of drug - pharmacokinetics	Lecture (1)	45 mts	Pharmacology

	- pharmacodynamics - mechanism of action - clinical uses - routes & duration of administration - common adverse effects - precautions/contraindications - drug interactions - dosage form - units of measurement of drug doses - affordability			
2. Discuss the basic principles of pharmacokinetics	(A) Definition of pharmacokinetics Routes of drug administration Drug absorption – factors affecting drug absorption (A) Disintegration time of a tablet (A) Drug distribution – factors affecting drug distribution (A)Drug metabolism Site of drug metabolism Phases of drug metabolism Factors affecting drug metabolism Kinetics order (A) Drug excretion (A) Bioavailability, clearance, volume of distribution, first pass metabolism, plasma elimination half life, steady state, first and zero order kinetics, therapeutic window, loading dose, maintenance dose (A) Bioequivalence, bioinequivalence (A) Pharmacokinetics of alcohol	Lectures (2) Tute (1)	45mts x 2 45mts x 3	Pharmacology

3. Discuss the basic principles of pharmacodynamics	(A) Mechanism of drug action (A) Concept of receptors agonist antagonist partial agonist (A) Physiological and pharmacological antagonism (A) Drugs acting by altering the effects of endogenous agonists (A) Drugs inhibiting transport process (A) Drugs activating enzymes (A) Drugs inhibiting enzymes (A) Efficacy and potency of drug (A) Dose- response curve	Lectures (2) Tute (1)	45mts x2 45mts x 3	Pharmacology

4. Explain the concept of essential medicines	(A) Concept of essential drugs and medicine (A) The need for such a concept (A) Present global situation (A) The history of essential drugs concept (A) Components of all essential medicines policy (A) Definition of essential drugs (A) Guidelines for establishing a national programme for essential drugs (A) Criteria for selection of essential drugs (A) Essential drug list of WHO and Sri Lanka	Bulletin Board (1)		Pharmacology

5. Discuss the principles of drug development	(A)Why drugs are developed? (A)Who develops drugs? (A) Pre clinical drug development (A) Meaning of the term R and D	Lecture (1)	45 mts	Pharmacology
6. Discuss the methods of drug evaluation- Clinical trials	(A) Phases of clinical trials (A) Study design (A) randomization (A) blindness (A) placebos (A) prospective study (A) cross over study (A) historical controls (A) Ethical considerations (A) Legal considerations and clinical trails registry	Lectures (1)	45 mts 45 mts	Pharmacology
7. (A) Discuss the concept of drug information	(A)Explain the term drug information and its significance (A)Groups to whom drug information should be given (A) Biased and unbiased information and sources, product information leaflet (A) Guidelines on drug advertisements and promotion of drugs (A) Evaluation of drug advertisements by comparing with accepted	Lecture (1)	45 mts	Pharmacology

	guidelines. (A) To develop communication skills in giving drug information to patients/ other health care workers	SGD/ Bulletin Board (1)	45 mts	
8. (A) Discuss drug policy and registration	(A) Purpose of drug registration (A) Legislation pertaining to registration (B) Procedure of drug registration (A) Quality assurance of drugs (A) Post marketing surveillance (A)Problems of drug registration (A) How to improve the present system	Lecture (1)	45 mts	Pharmacology
9. (A) Discuss aspects of drug management in the state sector	(A) Drug procurement,drug estimates,storage,local purchase (A) Drug utilisation studies, basic principles of pharmacoeconomics	CAL	45 mts	Pharmacology
10. (A) Discuss the basic principles of prescription writing	(A) Essential items included in a prescription (A) Errors in prescriptions (A) Types of prescriptions (A) Advantages and disadvantages of generic vs brand prescribing (A) Prescription for narcotic drugs	Lecture (1)	45mts	Pharmacology

	(A) To write a prescription (will not be done in this module, to be done later)	Skills(1)	45mts	

11. (A) Discuss patient compliance	(A)Define the term patient compliance (A) Importance of compliance (A) How big a problem is non compliance to drugs? (A) How can compliance can be measured? (A) The effects of non compliance to the patient (A) The factors that affect compliance (A) Methods of improving compliance (A) The meaning of the term placebo, placebo response, placebo reactor (A) Active and inactive placebos (A) The factors contributing towards the placebo effect	Lecture (1)	45mts	Pharmacology

12. (A) Describe adverse drug reactions	(A) Type A (dose related) and type B (allergic drug reactions) Treatment of anaphylactic shock Prevention of drug allergies ADR reporting (B) Type C, D, E reactions	Lecture (1)	45mts	Pharmacology

13 (A) Describe drug interactions	(A) Pharmaceutical interactions of drugs (A) Pharmacokinetic interactions (A) Pharmacodynamic interactions (A) Antagonists / synergism	Lecture (1)	45mts	Pharmacology
14 (A) Discuss the general principles of antibiotic treatment	(A) Classification (A) Site of action and mechanism of action (A) Concentration/ effect relationship in antibiotic therapy MIC(minimum inhibitory concentration) MBC (minimum bactericidal concentration) (A) Spectrum of activity (A) Selection of correct antibiotic (A) Appropriate route of administration,dose,frequency, duration of administration (A) Problems of antibiotic use - Resistance - Opportunistic infections - Treatment failure (A) Antibiotics in special situations (A) Antibiotics in combination (A) Chemoprophylaxis including surgical prophylaxis (A) Use of antibiotic guidelines (National/ Local)	Lecture (1)	45mts	Pharmacology

15. (B) Cytotoxic drugs	(B) Overview of normal & tumor cell growth - Universal tumor model - Cell cycle (B) Classification of chemotherapeutic agents - Indications for use - Metabolism - Administration - Adverse effects - Precautions (B) Evaluation of response of cytotoxic drugs	Lecture (1)	45 mts	Pharmacology

INTRODUCTION TO MICROBIOLOGY

Intermediate objectives	Broad content area	Teaching Learning Activity	Duration	Department
General Bacteriology Describe the general structure, function, growth requirements and diagnosis of bacteria	(A)General structure of bacteria, growth and classification. (B)Nutritional and environmental conditions and different types of growth media required for bacterial growth. (B)Microbiological basis and basic steps of Gram staining. (A)Medically important bacteria according to Gram reaction and shape by microscopic appearance	Lecture (1) Bulletin boards Vedio Practical (1)	45 mts 45mts x 3 45mts x 3	Microbiology
General Virology Describe the general structure of viruses, classification, pathogenesis and diagnosis of viral infections..	(A)General properties of viruses. Virus replication and classification (A)Mechanisms of pathogenesis of viral diseases including routes of virus transmission. (A)Methods of specimen collection and transport for virological investigations (A)Methods of virus detection in the laboratory and serological investigations used in diagnosis of viral infections (A)Laboratory investigations for diagnosis of viral infections	Lecture (1) Practical Combined practical (1) (virology + mycology	45 mts 45mts x 3	Microbiology

General Mycology Describe the structure of fungi, pathogenesis and diagnosis.	(A)Habitat, cell structure and morphology of fungi, methods of reproduction of fungi. (A)Fungi that cause diseases in humans. Sources, routes of infection, different types of diseases and their clinical manifestations caused by fungi. (A)Methods of specimen collection, transport and tests available for laboratory diagnosis of fungal infections.	Lecture (1)	45 mts	Microbiology
Microbial genetics Describe the principles of nucleic acid detection methods used in diagnosis of infectious diseases. Describe restriction endonucleases and their uses, artificial transfer of genetic material and cloning of genes	(A)Structure of DNA and RNA. Nucleic material of microbes. Nucleic acid detection methods and cloning (B)Genetic variations in bacteria and viruses.	Lecture (1)	45 mts	Microbiology
Disinfection and Sterilisation Describe the principles and process of sterilization and disinfection	(A)Various risk categories of infection associated with items (A)Pre sterilization procedures (A)Methods of sterilization (A)Monitoring of sterilization (A)Storage and care of sterilized instruments (A)Surface disinfectants Methods of disinfection. Factors that determine the effectiveness/usefulness of disinfectant. Principles of use of disinfectant. Methods of sterilizing medical items.	Lecture (1) Practical (1)	45 mts 45mts x 3	Microbiology

Antimicrobial Chemotherapy Describe the general characteristics, classification, mechanism of action of antimicrobial agents.	A)Mechanisms of action of clinically used anti-microbial drugs. Disadvantages of antimicrobial therapy Resistance of antibiotics (emergence mechanisms of resistance) Control of antibiotic resistance Antibiotic sensitivity tests General considerations in the use of antibiotics General characteristics and site of action of anti viral drugs Clinical use of antiviral drugs Antifungal drugs and their uses. ABST and its interpretation Detection of beta lactamase production MIC and its applications	Lecture (1) Practical (1)	45 mts 45mts x 3	Microbiology
Host parasite relationship, microbial virulence and pathogenesis Discuss the basic microbiological and immunological principles of host parasite relationship	(A)Definition of commensals, saprophytes, pathogens and opportunistic pathogens, normal flora, commensal flora, microbial virulence and evasion of host defences, intracellular vs extracellular pathogens, Koch's postulates Sources of transmission of infection Mechanisms of producing disease by microbes Incubation period, period of infectivity, carriers of disease Microbial virulence, virulent factors of bacteria that assist in colonization, invasion and damaging host tissue in evading host defences. Herd immunity	Lecture (1) Bulletin boards	45 mts	Microbiology

Laboratory diagnosis of infective diseases ● Know the principles of laboratory diagnosis of infective diseases. Recognize means to optimise the microbiological services to the patient and the community through communication with the members of the microbiology laboratory`	(A) • Collection and transport of specimens Direct examination of specimens Microscopy of stained smears made from clinical material Isolation by culture and identification of organisms Specific antigen detection methods Specific nucleic acid detection methods • Reliability of microbiological lab reports : quality of the clinical specimens collected • Timing of specimen collection • Special containers for collection and transport of specimens • Communicate with laboratory regarding delayed specimens, very ill and high risk patients • Obtain early reports and discussion of ABST results.	Lecture (1) Practical (1) (Vedio)	45 mts 45 mts x 3	Microbiology
Serodiagnosis	(A)Immunological principles of serodiagnostic techniques	Lecture (1) (Vedio) Practical (1) (45x 3)	45 mts 45mts x 3	Microbiology

INTRODUCTION TO PARASITOLOGY

Intermediate objectives	Broad content area	Teaching Learning Activity	Duration	Department
1.Define the following terms used in Parasitology	(A) Definition of the terms; Parasite, host, parasitism, commensalism, symbiosis, zoonosis	Lecture (2)	45mts x2	Parasitology
2. Classify different groups of parasites	(B)Classification of parasites			Parasitology
3. Explain the different types of parasites and hosts	(A)Parasites-ectoparasites, endoparasites, facultative parasites, obligatory parasites Hosts- Definitive, intermediate and reservoir hosts			Parasitology
4. Discuss the modes of transmission & sources of infection of parasitic diseases	(A)Source- Soil, water, food, vectors, animals, man. Modes of transmission – Oral, via skin, inhalation			Parasitology
5. Discuss the general life cycles	(B) Importance & general life cycles of parasites. (A)Simple, complicated (complex) life cycles Infective stages, hosts			Parasitology
6.List the pathogenic effects & clinical manifestations of parasites.	. (A)Pathogenic effects& clinical manifestations due to parasitic infection			Parasitology
7. 7.1) Name the medically important arthropods. 7.2) Describe their life cycles with emphasis on their medical importance.	. (A)Mosquitoes- *Culex quinquefasciatus* *Culex tritaeniorhynchus* *Culex gelidus, Aedes aegypti* *Aedes albopictus* *Mansonia uniformis* *Mansonia annulifera* *Armigeres subalbatus*	Lecture-3 Tute- 1 Practical - 1	45mts x 3 45mts x 3 45mts x 3	Parasitology

7.3) Describe the medical importance Outline the importance of life cycles where relevant.	*Anopheles culicifacies* .(A)Life cycles, where relevant medical importance, prevention & control *Trombiculid* mite (B)Medical Importance & control **Fleas** *Pulex irritans* *Xenopsylla cheopis* *Ctenocephlidae sp*.			

DNA Technology in Medicine

Intermediate objectives	Broad content area	Teaching Learning Activity	Duration	Department
1. Explain recombinant DNA technology /genetic engineering	(A) Restriction enzymes in DNA cloning RFLP Hybridization Southern blotting	Lectures (3) Tutorial (1)	45mts x 3 45mts x 1	Biochemistry
2. Outline the steps to make recombinant human insulin	(B) Recombinant human insulin			
3. Briefly describe the basic principles of applications of DNA technology in medicine.	(A) Applications of DNA technology in ; Gene therapy Prenatal diagnosis Restriction fragment length polymorphism (RFLP) in diagnosis. Polymarase chain reaction in AIDS diagnosis Genetic finger printing in paternity, Criminology & Forensic medicine			
4. Briefly describe the principles of using stem cells in therapeutic cloning	(B) Stem cells in therapeutic medicine			

Genetic Disorders and Genetic Counselling

Intermediate objectives	Broad content area	Teaching Learning Activity	Duration	Department
1)Define chromosomal disorders a)Single gene (monogenic) disorders b)Multifactorial disorders (polygenic) 2) Describe the mechanism of of single gene and multifactorial disorders 3) Describe the steps involved in genetic counseling 4)Describe the problems involved in basic genetic counseling 5)Classify congenital malformations according to aetiology. 6)Describe the steps in basic genetic counseling with regard to congenital malformations	• (A)(A)Definition • (A)examples and phenotypic features of each pattern • (A)Target groups for genetic counselling • Steps in genetic counselling • (A)Prerequisite procedures for genetic counselling • (A)Carrier detection • Prenatal diagnosis • (A)Problems encountered in genetic counselling • (A)Genetic history taking and constructing a pedigree chart • (A)Technologies which support genetic counselling such as • (A)Carrier detection • (A)Pre- natal diagnosis	Lectures (2) Tate (1)	45x2 mits 45x 2 mits	Paediatrics

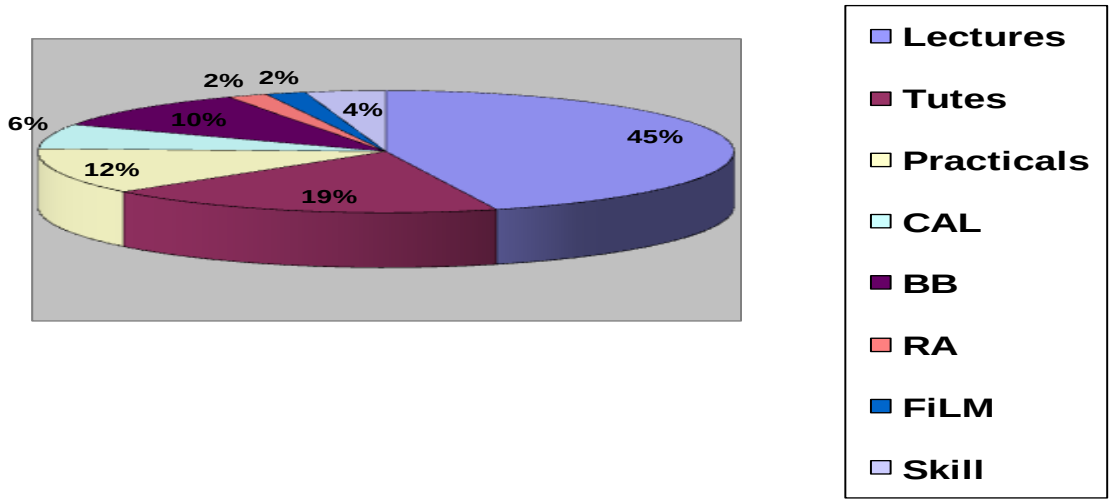
Essential competence (skills 3)

1) Taking a genetic history

2) Constructing 3 generation pedigree chart

3) Provide genetic counselling

Subject	Department	Lectures	Tutes /SGD	Practicals	CAL	Bulletin Boards	Reading Assignment	FILM	Skill
General Pathology	Pathology	25	14	05	05		02	02	
General Pharmacology	Pharmacology	15	02		01	02			01
Introduction to Microbiology	Microbiology	09		06	02	02			
Introduction to Parasitology	Parasitology	05	01	01					
DNA Technology in Medicine	Biochemistry	03	01						
Genetic Counseling	Paediatrics	02							03
		59	18	12	08	04	02	02	04



Time Tables

First 5 Weeks

Time	Monday	Tuesday	Wednesday	Thursday	Friday
8.00am- 12 noon	CLINICALS				
12 noon- 1.00pm	LUNCH				
1.00pm- 1.45pm	Path	Pharm	Micro	Parasit	Path
1.45pm- 2.30pm	Tute- Path/ Pharm	Tute/ Practical/ Parasit/ Path/ Self studies	Micro/ Self studies	Pharm	Path
2.30pm- 2.45pm					
2.45pm- 3.30pm	Tute- Path/ Pharm	Tute/ Practical Parasit/ Path Self studies	Micro/ Self studies	CHS	PPD
3.30pm- 4.15pm	Tute- Path/ Pharm	Tute/ Practical Parasit/ Path Self studies	Micro/ Self studies	CHS	PPD

PPD- Personal and professional development stream
CHS- community health stream

6th week

Time	Monday	Tuesday	Wednesday	Thursday	Friday
8.00am- 12 noon	CLINICALS				
12 noon- 1.00pm	LUNCH				
1.00pm- 1.45pm	Path	Pharm	Micro	Biochem	Path
1.45pm- 2.30pm	Tutes- Path Pharm	Tute/Practical Path/Micro Self studies	Micro / Self studies	Pharm	Path
2.30pm- 2.45pm					
2.45pm- 3.30pm	Path Pharm	Tute/ Practical Path/ Micro Self studies	Micro / Self studies	CHS	PPD
3.30pm- 4.15pm	Path Pharm	Tute/ Practical Path/ Micro Self studies	Micro / Self studies	CHS	PPD

7th & 8th weeks

Time	Monday	Tuesday	Wednesday	Thursday	Friday
8.00am- 12 noon	CLINICALS				
12 noon- 1.00pm	LUNCH				
1.00pm- 1.45pm	Path	Pharm	Micro	Biochem	Path
1.45pm- 2.30pm	Tutes - Path Pharm	Tute/Practical Path/Micro Self studies	Tute/ Practical Micro/Biochem Self studies	Paed	Path
2.30pm- 2.45pm					
2.45pm- 3.30pm	Path Pharm	Tute/Practical Path/Micro Self studies	Tute/ Practical Micro/Biochem Self studies	CHS	PPD
3.30pm- 4.15pm	Path Pharm	Tute/Practical Path/Micro Self studies	Tute/ Practical Micro/Biochem Self studies	CHS	PPD

9th week

Time	Monday	Tuesday	Wednesday	Thursday	Friday
8.00am- 12 noon	CLINICALS				
12 noon- 1.00pm	LUNCH				
1.00pm- 1.45pm	Path	Pharm	Micro	Path	Path
1.45pm- 2.30pm	Tutes/FiLM Path Pharm	Tute/Practical Path/Micro Self studies	Tute/ Practical Micro/Biochem Self studies	Pharm	Path
2.30pm- 2.45pm					
2.45pm- 3.30pm	Tutes/FiLM Path Pharm	Tute/Practical Path/Micro Self studies	Tute/ Practical Micro/Biochem Self studies	CHS	PPD
3.30pm- 4.15pm	Path/FiLM Pharm	Tute/Practical Path/Micro Self studies	Tute/ Practical Micro/Biochem Self studies	CHS	PPD

10th week

	Monday	Tuesday	Wednesday	Thursday	Friday
8.00am- 12 noon	CLINICALS				
12 noon- 1.00pm	LUNCH				
1.00pm- 1.45pm	Self Studies	Self Studies	Self Studies	Self Studies	Self Studies
1.45pm- 2.30pm	Tutes/FiLM Path/Pharm Self Studies	Tute/Practical Path/Micro Self studies	Self Studies	Self Studies	Self Studies
2.30pm- 2.45pm					
2.45pm- 3.30pm	Tutes/FiLM Path/Pharm Self Studies	Tute/Practical Path/Micro Self studies	Self Studies	CHS	PPD
3.30pm- 4.15pm	Tutes/FiLM Path/Pharm Self Studies	Tute/Practical Path/Micro Self studies	Self Studies	CHS	PPD

Recommended reading

Parasitology

1) Basic Clinical Parasitology
   Franklin A. Neva & Harold W. Brown
   Publisher:- Prentice Hall International Inc.

2) Medical Parasitology
   R.L.J. Muller & J. Baker
   Publisher:- Gower Medical Publishing1989

3) Medical Entomology for students
   M.W. Service

Pharmacology

Books

Clinical Pharmacology – Brown & Bennet
Pharmacology – Rang & Dale
Oxford textbook of Clinical Pharmacology & Drug Therapy – Grahame Smith & JK Aronson
Pharmacological Basis of Therapeutics – Goodman & Gilman
Bowman, W. C. & Rand, M. J. Text book of Pharmacology
Katzung, B. G. Basic & Clinical Pharmacology

Journals

Sri Lanka Prescriber
Drug and Therapeutics Bulletin - UK
Australian Prescriber

Other publications

British National Formulary
Sri Lanka Hospital Formulary

Pathology

1. Robbin's Pathologic basis of disease
2. Muir's textbook of pathology
3. Textbook of Pathology by Harsh Mohan
4. Concise Pathology by Parakrama Chandrasoma and Tailor

Medical Microbiology

1) Medical Microbiology
   By David Greenwood
   Richar Slack
   John Peuthener
   17th edition

2) Mim's Medical Microbiology
   Richard Goering
   Hazel Dockrell
   Mark Zuckerman
   Derek Wakelin
   4th Edition